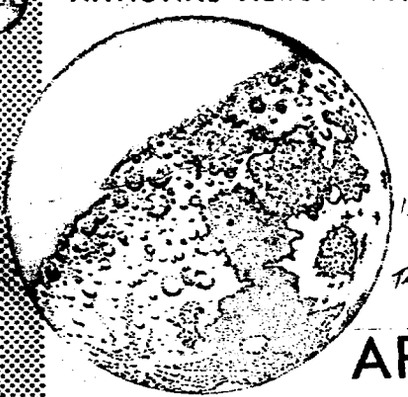
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



APOLLO 8
TECHNICAL AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

MANNED SPACECRAFT CENTER

HOUSTON, TEXAS

DECEMBER 1968

Introduction

This is the transcription of the Technical Air-to-Ground Voice Transmission (GOSS NET 1) from the Apollo 8 mission.

Communicators in the text may be identified according to the following list of definitions.

Command Module:

CDR	Commander	Frank Borman
CMP	Command module pilot	James A. Lovell
LMP	Lunar module pilot	William A. Anders
SC	Unidentifiable crewmember	

Mission Control Center:

CC	Capsule Communicator (CAP COMM)

Remote Sites:

CT	Communications Technician (COMM TECH)

A series of three dots (...) is used to designate those portions of the communications that could not be transcribed because of garbling. One dash (-) is used to indicate a speaker's pause or a self-interuption and subsequent completion of a thought. Two dashes (- -) are used to indicate an interruption by another speaker or a point at which a recording was terminated abruptly.

06 03 01 44 YORK Roger.

06 03 02 03 YORK Recovery 3 reports splashdown time was 51 and 50 seconds, and rescue is underway.

END OF TAPE

can be (see previous page)

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

MILA (REV 1)

00 00 00 01	CDR	Lift off. The clock is running.
00 00 00 04	CC	Roger. Clock.
00 00 00 14	CDR	Roll and pitch program.
00 00 00 16	CC	Roger.
00 00 00 18	CDR	How do you hear me, Houston?
00 00 00 19	CC	Loud and clear.
00 00 00 42	CC	Mark Mode 1 Bravo, Apollo 8.
00 00 00 44	CDR	Mode 1 B.
00 00 00 58	CC	Apollo 8, you're looking good.
00 00 01 01	CDR	Roger.
00 00 01 52	CC	Mark Mode 1 Charlie, Apollo 8.
00 00 01 54	CDR	Mode 1 C.
00 00 02 07	CC	Apollo 8, Houston. You are GO for staging. Over.
00 00 02 10	CDR	Roger.
00 00 02 36	CDR	Staging.
00 00 03 05	CDR	... second plane SEP.
00 00 03 08	CC	Roger. Understand; SEP.
00 00 03 10	CDR	Roger.
00 00 03 31	CDR	Houston, how do you read? Apollo 8.
00 00 03 34	CC	We hear you loud and clear, Apollo 8.
00 00 03 35	CDR	Okay. The first stage was very smooth, and this one is smoother.
00 00 03 40	CC	Understand; smooth and smoother. Looks good here.

00 00 03 47	CC	Apollo 8, Houston. Your trajectory and guidance are GO. Over.
00 00 03 51	CDR	Thank you, Houston. Apollo 8.
00 00 04 58	CC	Apollo 8, Houston. Your trajectory and guidance are GO. Over.
00 00 05 02	CDR	Thank you, Michael.
00 00 05 04	CC	Yes, you're looking real good, Frank.
00 00 05 05	CDR	Very good.
00 00 05 59	CC	Apollo 8, Houston. Trajectory and guidance are GO.
00 00 06 02	CDR	Roger. Apollo 8. GO.
00 00 06 05	CC	MARK.
00 00 06 06	CC	You have S-IVB to orbit capability. Over.
00 00 06 09	CDR	Roger. Thank you. S-IVB to orbit.
00 00 07 01	CC	Apollo 8, Houston. Your trajectory and guidance are GO. Over.
00 00 07 05	CMP	Apollo 8's GO.
00 00 07 09	LMP	Onboard chart confirmed.
00 00 07 10	CC	Roger. Understand.
00 00 07 31	CMP	Just tried to PU shift, I believe.
00 00 07 37	CC	Roger. That's the correct time for it.
00 00 07 41	CMP	Roger.
00 00 08 03	CC	Apollo 8, Houston. Your trajectory and guidance are GO.
00 00 08 06	CDR	Roger. We're picking up a slight POGO at this point.

00 00 08 11	CDR	Understand; slight POGO. Thank you.
00 00 08 30	CC	Apollo 8, Houston. You have level SENS time. Over.
00 00 08 32	CDR	Roger. Level SENS ON.
00 00 08 35	CDR	The POGO's damping out.
00 00 08 37	CC	Understand; POGO damping out.
00 00 08 42	CC	Apollo 8, Houston. You look good for staging.
00 00 08 45	CDR	Staging?
00 00 08 50	CDR	S-IVB ignition.
00 00 08 59	CDR	Guidance INITIATE.
00 00 09 06	CDR	Hey, Houston. How do you read? Apollo 8.
00 00 09 07	CC	Apollo 8, reading you loud and clear.
00 00 09 09	CDR	Okay. We got guidance INITIATE.
00 00 09 12	CC	Roger. Understand.
00 00 09 14	CC	Trajectory and guidance are GO.
00 00 09 17	CDR	Thank you.
00 00 09 49	CC	Mark Mode 4, Apollo 8.
00 00 09 52	CDR	Mode 4. Roger.
00 00 09 57	CC	Apollo 8, Houston. Your predicted cutoff, 11 plus 28. Over.
00 00 10 03	CDR	Understand; 11:28.
00 00 10 06	CC	Roger.
00 00 10 44	CDR	How do you read, Houston?

00 00 10 46	CC	Reading you loud and clear.
00 00 10 49	CC	Go ahead, Apollo 8.

00 00 10 50	CC	Apollo 8, this is Houston. Over.
00 00 10 54	CDR	Loud and clear, Houston. Loud and clear.
00 00 10 57	CC	Roger. You're looking good, Apollo 8.
00 00 11 16	CDR	HP is coming up —
00 00 11 21	CDR	HP is plus.
00 00 11 30	CDR	— and we have SECO.
00 00 11 33	CC	Roger. SECO.
00 00 11 58	CC	Apollo 8, Houston. You are GO.
00 00 12 01	CDR	Apollo 8 is GO. Thank you, Houston.
00 00 12 11	CDR	AOS is MANUAL.
00 00 12 16	CDR	... is OFF.
00 00 12 19	CMP	Houston, we're recording altitude HA 1026, HP 96.8, RVI 25 560.
00 00 12 32	CC	Roger, Apollo 8. Understand; apogee 102.6, perigee 96.8, and velocity - I understand - 25 560. Could you confirm?
00 00 12 44	CMP	That's affirmative.
00 00 12 45	CC	Thank you, Jim.
00 00 13 04	CC	Apollo 8, Houston. We are rewinding the tape recorder at this time. Over.
00 00 13 10	CDR	Roger.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

00 00 13 37	CC	Apollo 8, Houston. We have you apogee 103, perigee 99. Over.
00 00 13 46	CMP	103, 99.
00 00 13 49	CC	Roger.
00 00 14 28	CC	Apollo 8, Houston. We have you 1 minute from LOS the Vanguard. We'll see you over the Canaries at 16:28.
00 00 14 37	CDR	Thank you, Houston; 16:28.
00 00 14 39	CC	Roger.

CANARY (REV 1)

00 00 16 31	CC	Apollo 8, Houston through the Canaries. How do you read me?
00 00 16 35	CDR	You are loud and clear, Houston, over the Canaries.
00 00 16 37	CC	Good; you are clear, too. How is it going?
00 00 16 43	CDR	Fine. We seem to be going along very well. We noticed about a 10-pound DELTA-V between the oxygen fuel in the SPS zone.
00 00 17 01	CC	Apollo 8, Houston. That is normal; that's just about what we expected. Over.
00 00 17 07	CDR	Roger.
00 00 20 28	CC	Apollo 8, Houston.
00 00 20 33	CMP	This is 8. Go ahead.
00 00 20 34	CC	Roger, Jim. When you do your P52, you can expect a torquing angle of 0.25 degrees. Over.

00 00 20 44	CMP	Roger. Torquing angle of 0.25 degrees when we do P52. Thank you.
00 00 20 50	CC	Roger.
00 00 21 39	CMP	Stand by for the - a - stand by. Okay. Main REG B valve closed.
00 00 21 49	CC	Apollo 8, Houston. Say again.
00 00 21 53	CDR	Negative. We didn't say anything. Go ahead, Houston.
00 00 21 54	CC	I think you were transmitting; Jim was transmitting and disregard.
00 00 21 59	CDR	Roger. No matter.
00 00 22 28	CC	Apollo 8, Houston.
00 00 22 31	CDR	Go ahead, Houston. Apollo 8.
00 00 22 33	CC	Roger. You have 1 minute to LOS Canaries. Everything is looking good on board the spacecraft and the S-IVB; we will see you over Tananarive at 37 minutes. Over.
00 00 22 44	CDR	Roger. Thank you, Houston. Apollo 8.
00 00 22 57	CC	Apollo 8, Houston. You have the tape recorder low bit rate. Over.
00 00 23 02	CDR	Thank you.
00 00 23 03	CC	You are welcome.
		TANANARIVE (REV 1)
00 00 37 06	CC	Apollo 8, Houston. Over.
00 00 37 18	CDR	Houston, Apollo 8. How do you read?
00 00 37 20	CC	Apollo 8, Houston. Reading you weak but clear. How me?

00 00 37 25	CDR	You're loud and clear, Mike. Everything seems to be going very well.
00 00 37 30	CC	Okay. Everything looks real good on the ground with both vehicles. We still have you 103 by 99 on your orbit from my low speed data, and everything is looking real good. Over.
00 00 37 41	CDR	Roger. Thank you.
00 00 41 37	CC	Apollo 8, Houston.
00 00 41 41	CDR	Go ahead, Houston. Apollo 8.
00 00 41 43	CC	We have 1 minute to LOS Tananarive; we will see you again over Carnarvon at 52:09. Over.
00 00 41 51	CDR	Roger. We do have the optic covers jettisoned, and everything seems to be going fine.
00 00 41 56	CC	Roger. Optics cover jettisoned. Thank you.
		CARNARVON (REV 1)
00 00 52 44	CC	Apollo 8, Houston.
00 00 52 48	CDR	Go ahead, Houston. Apollo 8. You're loud and clear.
00 00 52 50	CC	Roger. You're loud and clear over Carnarvon. We would like to take DSE away from you for a second.
00 00 52 56	CDR	Roger. Go ahead.
00 00 52 57	CC	Thank you.
00 00 55 03	CDR	Lots of lights down there.
00 00 56 00	LMP	Houston, this is Apollo 8.
00 00 56 03	CC	Houston here, Apollo 8. Go ahead.

00 00 56 06	LMP	Roger. The torquing angle's 00026; that's plus 00026 plus 00035 plus 00119.
00 00 56 25	CC	Roger. Apollo 8, Houston. And copy plus 00026 plus 00035 plus 00119.
00 00 56 39	LMP	Roger. We checked on stars 6 and 15, and the error was plus 00001.
00 00 56 51	CC	Sounds pretty good.
00 00 56 55	LMP	Pretty good for a beginner here.
00 00 56 57	CC	Right.
00 00 57 05	CC	Apollo 8, Houston. We have about 1 minute to LOS Carnarvon, and everything is looking good with the spacecraft and the S-IVB. We'll see you over Honeysuckle Creek at 59:27 - just here shortly.
00 00 57 18	LMP	Thank you.
		HONEYSUCKLE (REV 2)
00 01 00 57	LMP	Hello, Houston. Apollo 8. How do you read?
00 01 01 00	CC	Loud and clear, Apollo 8. Houston here.
00 01 01 05	LMP	... How do you read?
00 01 01 06	CC	Apollo 8, Houston. Loud and clear. Over.
00 01 01 18	LMP	Houston, Apollo 8. How do you read?
00 01 01 20	CC	Reading you loud and clear, Bill. How me?
00 01 01 53	LMP	Houston, Apollo 8. Over.
00 01 01 57	CC	Apollo 8, Houston. Loud and clear. Over.
00 01 02 17	CC	Apollo 8, Houston. Over.
00 01 02 25	CC	Apollo 8, this is Houston. Over.

00 01 02 46	CC	Apollo 8, this is Houston. Over.
00 01 03 13	CC	Apollo 8, this is Houston. Over.
00 01 03 17	LMP	Houston, Apollo 8 on S-band. If you read, everything is GO.
00 01 03 21	CC	Roger. Understand, Apollo 8.
00 01 04 10	CC	Apollo 8, this is Houston. Over.
00 01 04 13	LMP	Roger, Houston. Read you loud and clear.
00 01 04 15	CC	We are reading you loud and clear also, Bill. The problem here over Honeysuckle has been on the ground. Your spacecraft equipment is all working fine. We are going to have LOS in about a minute, and we will pick you up over Guaymas at 01:28:13. Over.
00 01 04 32	LMP	Roger. 01:28:13; thank you.
00 01 04 35	CC	Roger.
00 01 04 37	CC	We are giving the DSE back to you, Apollo 8.
00 01 04 40	LMP	Roger. Thank you.
		CALIFORNIA (REV 2)
00 01 28 52	CC	Apollo 8, Houston. Over.
00 01 29 06	CC	Apollo 8, this is Houston. Over.
00 01 29 26	CC	Apollo 8, Apollo 8, this is Houston. Over.
00 01 30 14	CC	Apollo 8, this is Houston. Over.
00 01 30 17	LMP	Houston, Apollo 8. Over.
00 01 30 18	CC	Roger. How do you read me?
00 01 30 27	CC	Apollo 8, this is Houston. Over.
00 01 30 29	LMP	Roger. Houston, Apollo 8. Standing by for a GO for the backup COMM check. Over.

00 01 30 34	CC	Roger. Stand by one, Bill.
00 01 30 46	CC	California, inhibit VHF downlink.
00 01 30 50	CT	California inhibited.
00 01 30 52	CC	Apollo 8, this is Houston. Go ahead with backup voice check.
00 01 31 05	CC	Apollo 8, this is Houston. Go ahead with backup voice check. Over.
00 01 31 21	CC	Apollo 8, Houston. Go ahead with backup voice check. Over.
00 01 31 25	LMP	Roger, Mike. I gave you a count. I'll give you another one. Are you standing by?
00 01 31 29	CC	Roger. Standing by.
00 01 31 31	LMP	Roger. This is Apollo 8 through backup voice: 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. Over.
00 01 31 42	CC	Roger, Bill. Reading you weak but clear. Go ahead with normal S-band voice check.
00 01 31 49	LMP	Roger.
00 01 32 11	CC	Apollo 8, Houston. Over.
00 01 32 18	LMP	Houston, this is Apollo 8 on normal S-band: 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. How do you read? Over.
00 01 32 25	CC	Apollo 8, Houston. Reading you loud and clear normal S-band. How me?
00 01 32 49	CC	Apollo 8, Houston. Reading you loud and clear on normal S-band. How me? Over.
00 01 33 03	CC	Apollo 8, Houston. Over.

00 01 33 06	LMP	Roger, Houston. This is Apollo 8. Reading you loud and clear on normal.
00 01 33 13	CC	Roger. Reading you loud and clear on normal S-band. How me?
00 01 33 20	LMP	Clear.
00 01 33 29	CC	Apollo 8, Houston. Over.
00 01 33 32	LMP	Houston, this is Apollo 8. How do you read on VHF? Over.
00 01 33 35	CC	Apollo 8, Houston. Reading you loud and clear. We are also reading you loud and clear on S-band normal. How me? Over.
00 01 33 43	LMP	Roger. I'm reading you loud and clear. I'll give you another count on S-band normal: 1, 2, 3, 4, 5, 5, 4, 3, 2, 1. How do you read me?
00 01 33 52	CC	Roger. That's loud and clear, Bill. California, would you ENABLE the VHF downlink, please?
00 01 34 07	CT	California ENABLED.
00 01 34 50	CC	Apollo 8, Houston. Over.
00 01 34 53	CMP	Go ahead, Houston.
00 01 34 55	CC	Roger. We are going to rewind your tape recorder, and we have the TLI plus 90 and TLI plus 4-hour PAD's at your convenience. Over.
00 01 35 11	CMP	Roger. Ready to copy.
00 01 35 13	CC	Roger. TLI plus 90, SPS slash G&N, 635 31 minus 164 plus 129. Are you with me so far? Over.
00 01 35 36	CMP	Roger. We're with you.

00 01 35 38	CC	Okay. 004 17 42 65 minus 04402 minus 00001 plus 48387 178 169 359, not applicable, plus 00185 48587 603 48383 06 2027 250, earth center 0123 - correction: down 123; I say again, down 123, right 22 plus 21123 minus 03000 12313 34494 017 47 39, north set stars roll 068, pitch 097, yaw 356, ullage none; other: high speed procedure not required. Over.
00 01 38 17	CMP	Houston, this is Apollo 8. We missed a portion of that maneuver PAD. Can you start with HP and go down to boresight star? Over.
00 01 38 31	CC	Roger. I say again, HP plus 00185. Are you with me?
00 01 38 41	CMP	Roger. We're with you.
00 01 38 43	CC	48587 603 48383 06 2027 250, and the boresight star is earth's center. Over.
00 01 39 33	CC	Apollo 8, Houston. Did you copy?
00 01 39 35	CMP	Roger, Houston. This is a TLI plus 90 as follows: minus - the weight will be plus 63531 minus 164 plus 129 0041 74265 minus 04402 minus 0001 plus 48387 178 169 359 plus 00185 48587 603 48383. We will have to get the sextant information later; 123 minus 030.
00 01 41 18	CC	Apollo 8, Houston. Over.
00 01 41 19	CMP	Houston, did you copy?

BERMUDA (REV 2)

00 01 41 21	CC	Apollo 8, Houston. We are picking you up now over Bermuda. I did not copy your readback after DELTA-V_C. That was the last quantity - I received.
00 01 41 32	CMP	Roger, Houston. Could you give us the sextant information again, the sextant star information?
00 01 41 38	CC	That's affirmative. The sextant star 06, shaft 2027, trunnion 250. Over.
00 01 41 53	CMP	Roger. Starting out with the sextant star, 06 2007 250, earth's center down 123, right 22 plus 1123 minus 03000 12313 34494 017 47 39; north set, roll 068, pitch 097, yaw 356, no ullage.
00 01 42 34	CC	Roger. Jim, on your sextant star, the shaft should be 2027 - 2027. Over.
00 01 42 44	CMP	Roger. Copy 2027.
00 01 42 51	CC	Apollo 8, Houston. Would you go to POO and ACCEPT, please? We want to send up the state back zero.
00 01 43 02	CMP	We are in ACCEPT.
00 01 43 05	CC	Roger. You are in ACCEPT.
00 01 43 08	CMP	Roger. Go ahead. We are in POO and ACCEPT.
00 01 43 11	CC	Thank you. I have your TLI plus 4-hour PAD when you are ready to copy and your TLI PAD also.
00 01 43 19	CMP	Ready to copy.

00 01 43 21	CC	Okay. TLI plus 4 hours, SPS/G&N. Weight is still 63531 as printed; the pitch and yaw minus 164 and plus 129. Are you with me so far?
00 01 43 43	CMP	We are with you.
00 01 43 45	CC	GETI 006 47 27 79 minus 01594 plus 00000 plus 52885 178 155 000, not applicable, plus 00192 52909. Are you with me? Apollo 8, Houston. Over.
00 01 44 47	CMP	This is Apollo 8. You're braking lock on S-band, and again, you got cut off just at HP.
00 01 44 53	CC	Okay. HP plus 00192 52909 627 52694. Are you with me? Over.
00 01 45 23	CMP	Roger.
00 01 45 26	CC	Roger. Sextant star, 12 1037 211, earth center down 063, right 23 plus 1068 minus 16500 12505 35061 026 42 57 north set stars, roll 068, pitch 097, yaw 356, ullage none, high speed procedure not required. Over.
00 01 46 47	CMP	Roger, Houston. TLI plus 4. Weight remains the same, minus 164 plus 129 006 47 27 79 minus 01594 plus all balls plus 52885 178 155 000 NA plus 00192 52909 627 52694 12 1037 211, earth center down 063, right 213 plus 1068 minus 16500 12505 35061 026 42 57, north set roll 068, pitch 097, yaw 356, no ullage, high speed procedure not required.

00 01 48 07	CC	Very good. That's all correct, and I have a TLI PAD for you whenever you're ready to copy it.
00 01 48 16	CMP	Ready to copy.
00 01 48 17	CC	Okay. Your computer PAD is in and verified. You can go to BLOCK, and we're going to have LOS here in about 45 seconds. I'll start on the TLI PAD anyway. Time base 6P24136, roll 179, pitch 045, yaw 001, born time 5 plus 15, DELTA V_C prime 105 196 ZI 35569, roll 357, pitch 091, yaw 001. Comments: TLI plus 10 minutes; abort attitude is 199 degrees, and I don't believe you've got time to read that back. We'll see you over Canaries at 1:50 GET. Adios.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

CANARY (REV 2)

00 01 50 30	CC	Apollo 8, Houston. Over.
00 01 50 33	CMP	Roger. Houston, Apollo 8. Reading you loud and clear. TLI plan 24136 179 045 001 515 105196 35569 357 091 001; TLI plus 10, abort -ttitude 199 on the pitch.
00 01 51 06	CC	Roger, Apollo 8. That is correct. We'd like to double check one number on the TLI plus 90 minutes. When you can dig that out, let me know.
00 01 51 18	CMP	Roger. Go ahead.
00 01 51 19	CC	Okay. It's - the sextant shaft angle should be 2027. Over.
00 01 51 29	CMP	Roger. Sextant shaft is 2027.
00 01 51 35	CC	Thank you, sir.
00 01 53 09	CC	Apollo 8, Houston. Over.
00 01 53 12	LMP	Go ahead, Houston.
00 01 53 13	CC	Roger. S-IVB looking good, both from a guidance and a consumable viewpoint; it all looks GO.
00 01 53 20	LMP	Roger.
00 01 53 30	CC	The DSE is all yours, Bill.
00 01 53 32	LMP	Thank you.
00 01 54 18	CC	Apollo 8, Houston. We will have LOS in 1 minute; we'll pick you up again over Tananarive at 02:09.

00 01 54 28	CDR	Roger, Michael. Thank you.
00 01 54 30	CC	Roger. How does it feel up there?
00 01 54 33	CDR	Very good, very good. Everything is going rather well. It looks just about the same way it did 3 years ago.
00 01 54 42	CC	Has Bill got time from playing with his tape recorder to look out the window?
00 01 54 45	CDR	Roger. We had one little incident here. Jim Lovell inadvertently popped one liferaft, so we've got one full May West with us here.
00 01 55 02	CC	Roger. Understand.
		TANANARIVE (REV 2)
00 02 09 49	CC	Apollo 8, Houston through Tananarive. Over.
00 02 09 55	CDR	Roger. Houston, this is Apollo 8.
00 02 09 57	CC	Roger, Apollo 8. We don't have anything for you; we are just standing by. You're looking good.
00 02 10 02	CDR	Roger. Thank you.
00 02 14 07	CC	Apollo 8, Houston.
00 02 14 11	CDR	Gemini 8 - correction: Apollo 8.
00 02 14 16	CC	Roger. Gemini 8, Houston. We would like to bring you up to date on the COMM situation while we've got some quiet time here. We'll be LOS Tananarive in another 2 minutes; we'll be picking you up over Carnarvon at 2 hours 25 minutes and 22 seconds. LOS Carnarvon will

		be 02:31:55; then we've got ARIA number 1 coming in about 02:37:30; and after that, we will have a hand-off to Mercury to Hawaii to Goldstone, and we should have continuous COMM. Over.
00 02 14 28	CDR	Very good. That's very good. Thank you.
00 02 15 01	CC	Roger.
00 02 15 10	CC	Thought you were Gemini 7, not 8.
00 02 15 14	CDR	Roger.
		CARNARVON (REV 2)
00 02 26 02	CC	Apollo 8, Houston. Over.
00 02 26 06	CDR	Go ahead, Houston. Apollo.
00 02 26 08	CC	Roger. Loud and clear. We'd like to take your tape recorder for 2 minutes, please.
00 02 26 13	CDR	Can he have it, Bill?
00 02 26 15	LMP	Go ahead.
00 02 26 16	CDR	Thank you.
00 02 26 20	CC	By the way, we read out the voice tape, and the quality of the voice tape is good - from the DSE.
00 02 26 28	CDR	Good.
00 02 27 20	CC	Apollo 8, Houston.
00 02 27 21	CDR	Go ahead, Houston.
00 02 27 22	CC	Alright, Apollo 8. You are GO for TLI. Over.
00 02 27 27	CDR	Roger. We understand we are GO for TLI.
00 02 31 26	CC	Apollo 8, Houston. Over.

00 02 31 29	CDR	Go ahead, Houston. Apollo 8.
00 02 31 31	CC	Roger. We will have LOS in about 30 seconds, and we'll pick you up over ARIA 1 at 02:37:30.
00 02 31 38	CDR	Roger.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

ARIA 1 (REV 2)

00 02 38 21	CDR	Houston, this is Apollo 8. How do you read?
00 02 38 24	CC	Apollo 8, Houston. Over.
00 02 38 29	CDR	Houston, Apollo 8. I hear you garbled but fairly clear.
00 02 38 33	CC	Roger. Apollo 8, Houston. We're transmitting through ARIA 1, and you are also garbled.

MERCURY (REV 2)

00 02 45 12	CC	Apollo 8, Houston. Over.
00 02 45 15	CDR	Go ahead, Houston. Apollo 8.
00 02 45 17	CC	Good; you're loud and clear through the Mercury, and you're looking good down here. Everything looks good.
00 02 45 23	CDR	Roger. Understand. Our O_2 flow is a little bit higher than I thought, but Bill says that it's just about what he expected.
00 02 45 31	CC	Roger. Understand.
00 02 45 36	CC	Your He flow looks good down here.
00 02 45 43	CDR	Thank you.
00 02 49 28	CC	Apollo 8, Houston. You're looking good.
00 02 49 31	CDR	Roger.
00 02 50 13	CC	Apollo 8, coming up on 20 seconds to ignition. Mark it, and you're looking very good.
00 02 50 20	CDR	Roger.
00 02 50 40	CMP	IGNITION.
00 02 50 41	CC	Roger. IGNITION.

OR 2:50:37.1

00 02 51 12	CC	Apollo 8, Houston. You're looking good.
00 02 51 58	CC	Apollo 8, Houston. Trajectory and guidance look good. Over.
		HAWAII (REV 2)
00 02 52 02	CDR	Roger. Apollo 8, looks good here.
00 02 52 19	CC	Apollo 8, Houston. We're predicting cut-off, 02:55:58, and it looks exactly nominal here.
00 02 52 27	CDR	Roger.
00 02 52 34	CC	Apollo 8, Houston. That predicted cut-off, 02:55:52, 52, and that's exactly as it should be.
00 02 52 40	CDR	02:55:52.
00 02 53 42	CC	Apollo 8, Houston. You are looking good here, right down the center line.
00 02 53 45	CDR	Roger. Apollo 8.
00 02 54 54	CC	Apollo 8, Houston. You are looking good, right down the old center line.
00 02 54 58	CDR	Roger. Apollo 8.
00 02 55 57	CDR	Okay. We got SECO right on the money.
00 02 55 58	CC	Roger. Understand; SECO.
00 02 57 27	CC	Apollo 8, Houston. Looks like a good cut-off. Everything is looking real good down here.
		CALIFORNIA (REV 2)
00 02 58 04	CC	Apollo 8, Houston.
00 02 58 06	CDR	Go ahead, Houston. Apollo 8.

00 02 58 07	CC	Your cut-off looked very good down here. We have a whole room full of people that say you look good.
00 02 58 11	CDR	Roger. Thank you. The only situation we have here is the O_2 flow is high, O_2 flow is a bit high.
00 02 58 22	CC	Roger. Understand; O_2 flow high.
00 02 58 24	CMP	We'll get to first status report here shortly.
00 02 58 26	CC	Roger.
00 02 58 57	CC	Apollo 8, Houston. Your booster configured normally, and we're not concerned with the O_2 high flow. We think it's normal.
00 02 59 05	CDR	Okay.
00 02 59 52	CMP	Houston, Apollo 8.
00 02 59 54	CC	Go ahead, Apollo 8.
00 02 59 56	CMP	Roger. The DELTA-TIG looked like it was right on. Burn time appeared to us to be about 2 seconds longer, 517. VGX was reading 95485 when we got it. The attitude was nominal. V_I was reading 35452 at cut-off, H-dot 04552, and H is 01791. DELTA-V_C on the EMS was minus 20.6.
00 03 00 35	CC	Roger. We copy that, Jim, and I've got some times here for you.
00 03 00 41	CMP	Roger. Go ahead.
00 03 00 42	CC	Booster begins maneuver to SEP attitude at 03:10:55. Takes 5 minutes, so it arrives at